

Applicants: MERON, Gavriel et al.  
Serial Number: 10/036,490  
Attorney Docket: P-2038-US1

**Requested Amendments to the Claims:**

The following Listing of Claims is intended to replace all prior versions and Listings of Claims in the application:

**Listing of Claims:**

1. (Currently Amended) A system for determining in vivo the presence and/or concentration of a biological and/or chemical substance in a body lumen comprising:  
an autonomous swallowable capsule comprising at least a solid support, ~~the support being inserted into a body lumen and~~ having immobilized thereon at least one reactant which when in the presence of the substance reacts with the substance resulting in an optical change; [[and]]  
a detecting unit, in communication with the support; and  
a battery within said autonomous swallowable capsule to provide power to said detecting unit.
2. (Canceled)
3. (Previously Presented) A system according to claim 1 wherein the support is attached to or is an integral part of said swallowable capsule.
4. (Original) A system according to claim 1 wherein the support is a glass support.
5. (Original) A system according to claim 1 wherein the support is a plastic support.
6. (Canceled)

Applicants: MERON, Gavriel et al.  
Serial Number: 10/036,490  
Attorney Docket: P-2038-US1

7. (Original) A system according to claim 1 wherein the reactant is immobilized onto the support via a bridging group.
8. (Original) A system according to claim 1 wherein the reactant is a chemical compound.
9. (Original) A system according to claim 1 wherein the reactant is a biological compound.
10. (Original) A system according to claim 1 wherein the reactant is an enzyme.
11. (Original) A system according to claim 1 wherein the reactant is an antibody.
12. (Canceled)
13. (Canceled)
14. (Previously Presented) A system according to claim 1, the detecting unit imaging a reaction between the reactant and the substance.
15. (Original) A system according to claim 1 further comprising at least one illuminating element for illuminating the support.
16. (Previously Presented) A system according to claim 50 wherein the support is transparent to illumination emitted from the illuminating element.
17. (Canceled)

Applicants: MERON, Gavriel et al.  
Serial Number: 10/036,490  
Attorney Docket: P-2038-US1

18. (Original) A system according to claim 1 wherein the detecting unit detects optical density.
19. (Original) A system according to claim 1 wherein the detecting unit detects color changes.
20. (Previously Presented) A system according to claim 1 further comprising a monitoring unit in communication with the support, said monitoring unit locating the support in the body lumen
21. (Previously Presented) A system according to claim 20 wherein said autonomous swallowable capsule further comprises a transmitting unit in communication with the support.
22. (Previously Presented) A system according to claim 21 wherein the monitoring unit comprises a reception system receiving transmitted output from said transmitting unit thereby locating the support along a pre-prepared map of the lumen.
23. (Withdrawn) A method for determining in vivo the presence and/or concentration of a biological and/or chemical substance in a body lumen comprising the steps of: inserting into a body lumen a solid support, said support having immobilized thereon at least one reactant which, when in the presence of the substance, reacts with the substance resulting in an optical change and said support being in communication with a detecting unit; and receiving information from the detecting unit.
24. (Withdrawn) A method according to claim 23 wherein the support is attached to or is an integral part of a stent, needle or endoscope.

Applicants: MERON, Gavriel et al  
Serial Number: 10/036,490  
Attorney Docket: P-2038-US1

25. (Withdrawn) A method according to claim 23 wherein the support is attached to or is an integral part of a swallowable capsule
26. (Withdrawn) A method according to claim 23 wherein the support is a glass support.
27. (Withdrawn) A method according to claim 23 wherein the support is a plastic support.
28. (Withdrawn) A method according to claim 27 wherein the plastic is isoplast.
29. (Withdrawn) A method according to claim 23 wherein the reactant is immobilized onto the support via a bridging group.
30. (Withdrawn) A method according to claim 23 wherein the reactant is a chemical compound.
31. (Withdrawn) A method according to claim 23 wherein the reactant is a biological compound.
32. (Withdrawn) A method according to claim 23 wherein the reactant is an enzyme.
33. (Withdrawn) A method according to claim 23 wherein the reactant is an antibody.
34. (Withdrawn) A method according to claim 23 wherein the reactant is poly acrylic acid.
35. (Withdrawn) A method according to claim 23 wherein the reactant is polymethylmetacrylate having thrombin linked thereon.

Applicants: MERON, Gavriel et al  
Serial Number: 10/036,490  
Attorney Docket: P-2038-US1

- 36. (Withdrawn) A method according to claim 23 wherein the detecting unit is capable of imaging a reaction between the reactant and the substance.
- 37. (Withdrawn) A method according to claim 23 further comprising the step of utilizing illumination to illuminate the support.
- 38. (Withdrawn) A method according to claim 37 wherein the support is transparent to the illumination.
- 39. (Withdrawn) A method according to claim 38 wherein the reactant is transparent to the illumination.
- 40. (Withdrawn) A method according to claim 23 wherein the detecting unit detects optical density.
- 41. (Withdrawn) A method according to claim 23 wherein the detecting unit detects color changes.
- 42. (Withdrawn) A method according to claim 23 further comprising the step of locating the support in the body lumen.
- 43. (Withdrawn) A method according to claim 42 wherein locating the support in the body lumen is done by a monitoring unit that is in communication with the support.

Applicants: MERON, Gavriel et al.  
Serial Number: 10/036,490  
Attorney Docket: P-2038-US1

44. (Withdrawn) A method according to claim 43 wherein the monitoring unit comprises a reception system operable with a transmitting unit, said transmitting unit being in communication with the support and said reception system capable of receiving transmitted output from the transmitting unit thereby locating the support along a pre prepared map of the lumen.
45. (Canceled)
46. (Previously Presented) A system according to claim 22 wherein said monitoring unit is included within said autonomous swallowable capsule.
47. (Withdrawn) A method according to claim 23 for the detection of substances in the gastrointestinal tract.
48. (Withdrawn) A method according to claim 47 for the detection of blood or blood components in the gastrointestinal tract.
49. (Canceled)
50. (Previously Presented) A system according to claim 15 wherein the combination of the support and the reactant is transparent to the illumination emitted from the illuminating element.